theory may be considered as sufficient authority to be assumed in every case where other circumstances do not occur more imperatively requiring attention than the provision for the least resistance to the motion of the boat, or the cheapest employment of moving power.

For such boats as the commissioners believe especially calculated for the sort of mixed navigation which the route would combine, boats similar to those used on the Mersey and Irwell Canal in England, and sometimes since on the River Scheldt in Holland, having thirteen feet beam and drawing $4\frac{1}{3}$ feet water, with a burden of seventy tons, would be required, according to these principles, in a Canal, whose banks sloped at an angle of forty-five degrees, a water line of 58.5 feet, a width at bottom of 43 71, and a depth of 7.39 feet. Du Buat, has already given the dimensions of a canal for the same boats, (whose sides, however, should have such an inclination that the case be 4-3 of the height) viz: $58\frac{1}{2}$ water line, $37\frac{1}{2}$ at bottom, and 7 7-8 depth: such in fact being nearly the measure of the river Scheldt, at mid-tide. Yet there may be occasionally circumstances which do not, consistently with a just economy, allow these dimensions, and there are frequent instances of their having been either by accident or design departed from. The canal forming the junction of the Thames and Severn, navigated by boats of seventy tons, with twelve feet beam, and four feet draught, has yet for the greater part but forty-two feet water line, and thirty feet at the bottom. And in our own country we have an example of a similar reduction proposed for prudential reasons in the case of the Chesapeake and Ohio Canal.

It is more than probable that for a considerable period the navigation would be used by sea vessels, of sufficiently light draught to pass through the canal, but whose breadth of beam would be greater than twelve or thirteen feet—the amount of excavation too in certain portions of the line, would be materially influenced by the widening of the cut. For these considerations the commissioners would suggest as suitable proportions, the following, viz: forty feet water line, with a slope of 1.5 to 1, giving twenty-five feet width at bottoms: a berm of 1.5 feet width, and ascending one foot to the guard bank of three feet and tow-paths of nine